

**MANUFACTURE OF COMPOUND SEMICONDUCTOR DEVICE**

Patent Number: JP5308085

Publication date: 1993-11-19

Inventor(s): YAMANAKA KAZUO

Applicant(s): NEC CORP

Requested Patent:  JP5308085

Application Number: JP19920080159 19920402

Priority Number(s):

IPC Classification: H01L21/52; H01L23/12

EC Classification:

Equivalents:

---

**Abstract**

---

**PURPOSE:** To achieve a sufficient adhesion strength and at the same time save the amount of gold and tin by forming an alloy of gold and tin on the rear surface of a compound semiconductor element and placing a semiconductor element where the alloy of gold and tin is formed on the mount island of a heated ceramic case and then bonding it.

**CONSTITUTION:** The rear surface of a wafer where main processes such as diffusion and metallization are completed is abraded to a desired thickness, a gold layer 5 is formed on the rear surface by sputtering, and then gold and tin 3 are bonded to it by deposition. Furthermore, a wafer is cut by a dicing saw and then an individual compound semiconductor element 4 is placed on a mount island 2 of a heated ceramic case 1, it is bonded at the same time when gold and tin are melted. Further, wire bonding is performed by a bonding wire 6 to obtain a compound semiconductor device, thus eliminating excessive solder and a risk of contact with the wire bonding.

---

Data supplied from the esp@cenet database - I2

---

(19)日本国特許庁 (JP)

(12) 公開特許公報 (A)

(11)特許出願公開番号

特開平5-308085

(43)公開日 平成5年(1993)11月19日

(51)Int.Cl.<sup>5</sup>  
H 01 L 21/52  
23/12

識別記号 庁内整理番号  
D 7376-4M

9355-4M

F I

H 01 L 23/ 12

技術表示箇所

F

審査請求 未請求 請求項の数 1(全 3 頁)

(21)出願番号 特願平4-80159

(22)出願日 平成4年(1992)4月2日

(71)出願人 000004237

日本電気株式会社

東京都港区芝五丁目7番1号

(72)発明者 山中一雄

東京都港区芝五丁目7番1号日本電気株式  
会社内

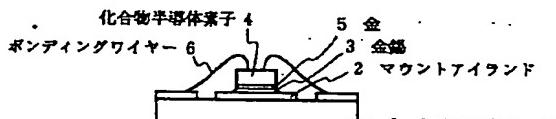
(74)代理人 弁理士 京本直樹 (外2名)

(54)【発明の名称】 化合物半導体装置の製造方法

(57)【要約】

【目的】化合物半導体素子をマウントする時に使用するAuSnソルダーの酸化を防ぐ。

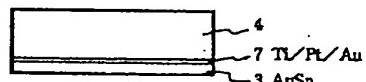
【構成】あらかじめ化合物半導体素子の裏面にAuSnを蒸着しておき、ソルダーを使用しないで素子をマウントする。これによりAuSnソルダーを使用する時に生ずる酸化が防止出来る。



(A)



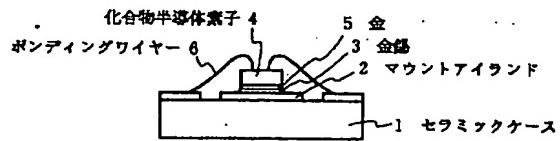
(B)



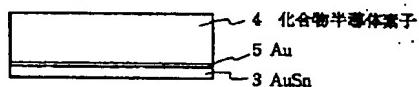
(C)

BEST AVAILABLE COPY

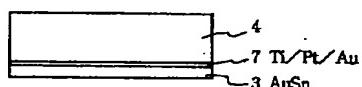
【図1】



(A)



(B)



(C)

BEST AVAILABLE COPY